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In re Boe

Patent Appeal No. 74-555

## UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

*505 F.2d 1297; 1974 CCPA LEXIS 107; 184 U.S.P.Q. (BNA) 38*

December 5, 1974, DECIDED.

[\*1] Serial No. 112,766.

MILLER

MILLER, Judge.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the examiner's rejection under 35 USC 103 of claims 1-9 - all the claims in application serial No. 112,766, filed February 4, 1971, for "Release Finish for Yarns Containing Segmented Elastomers." We affirm.

## INVENTION

The invention involves a process for reducing tackiness of freshly spun filaments, composed at least partly of a segmented elastomeric polymer, <sup>1</sup> by applying an aqueous, lubricating finish emulsion to such filaments, and the resulting lubricated filament. It is known that filaments of segmented elastomeric polymers are quite tacky upon extrusion, and there is a greater tendency (compared to relatively inelastic filaments) for adjacent filaments to cohere and for the yarn to adhere to other surfaces, resulting in erratic running tensions. Various lubricating finishes have been tried on segmented polymers but have not proved to be fully satisfactory. For example, textile oils are harmful to the physical properties of the segmented elastomeric polymers, and talc as a finishing agent has manufacturing disadvantages [\*2] such as causing dust hazards. Process claim 1 and product claim 6 are illustrative of appellants' invention:

<sup>1</sup>Segmented elastomeric polymers consist of segments of a high-melting, crystalline polymer, such as a polyurethane, alternating with segments of a low-melting, amorphous polymer, such as a polyester or hydrocarbon polymer. Illustrative of segmented elastomeric polymers are spandex fibers which employ a polyurethane as the crystalline, high-melting polymer.

1. A process for reducing tackiness in freshly spun filaments at least partly composed of a segmented elastomer, said process comprising:

a. forming said filaments;

b. applying to said filaments an aqueous emulsion containing by weight:

(1) between 1 and 15% emulsifiable wax selected from the group consisting of paraffin waxes, microcrystalline waxes and polyethylene waxes,

(2) between 10 and 45% textile oil lubricant, and

(3) sufficient emulsifier to maintain said wax and said textile oil in suspension in said emulsion; and

c. collecting said filaments in an orderly fashion.

6. A lubricated filament composed at least partially of a segmented elastomeric polymer, said filament [\*3] having deposited thereon between 1 and 5% based on the weight of said filament of a lubricant composition, said composition comprising based on the weight of said filament:

a. between 0.01 and 1.0% of an emulsifiable wax selected from the group consisting of paraffin waxes, microcrystalline waxes, and polyethylene waxes;

b. between 0.5 and 3.5% of a textile oil; and

c. between 0.1 and 2.5% of an emulsifier.

## PRIOR ART

Barrett <sup>2</sup> discloses a method of applying an aqueous, lubricating finish emulsion to freshly spun filaments to prevent excessive yarn tension during drawing by minimizing friction between the filaments. Appellants have conceded for purposes of this appeal that the aqueous emulsion of Barrett may be considered the same as that of appellants. The tension problem caused by tackiness and the segmented elastomeric polymers are not men-

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tioned in Barrett, but the aqueous emulsion is disclosed to be suitable for a wide variety of synthetic polymeric substances, including polyurethanes, hydrocarbon polymers, and polyesters, which can be used in making segmented elastomeric polymers.

2United States Patent 3,113,369, issued December 10, 1963, on application serial No. 25,902, filed May 2, 1960, to Barrett, Estes, and Stow, Jr. for "Yarn Manufacture and Products Obtained Thereby."

[\*4] Yuk<sup>3</sup> discloses that the tackiness of segmented elastomeric polymers may be avoided by application of an anhydrous lubricating finish of textile oils and certain finely-divided soaps. Appellants rely heavily upon the following statement from Yuk (emphasis by appellant):

3United States Patent 3,039,895, issued June 19, 1962, on application serial No. 18,264, filed March 29, 1960, for "Textile."

I have discovered that textile oils make a satisfactory finish for elastic filaments from segmented copolymers only when there is dispersed in such oils essentially colorless, finely-divided soaps of certain metals of Groups I, II, and III of the periodic table.

#### REJECTIONS

Product claims 6-8 were rejected for obviousness under 35 USC 103 over Barrett in view of Yuk or vice versa. The examiner reasoned that since the lubricating finish of Barrett can be used on a wide variety of polymers, including polyurethanes, and since the segmented elastomeric polymers of Yuk can be made from polyurethanes, it would be obvious to one of ordinary skill in the art to substitute Yuk's filaments of the segmented elastomeric polymers for the synthetic filaments of Barrett. Conversely, it [\*5] would be obvious to one of ordinary skill in the art to substitute the lubricating finish of Barrett for the lubricating finish of Yuk.

The examiner's rejection of process claims 1-5 and 9 was simply stated in these words:

Claims 1-5 and 9 are rejected under 35 USC 103 as obvious and unpatentable over Barrett et al. The claimed method is considered to define nothing more than an old and obvious method of applying a lubricating finish to synthetic polymeric filaments as evidenced by Barrett et al., Example I, VII, claims 3 and 5. Even if the final product were novel, this would not be controlling of obvious [ness] of the method. See *In re Neugebauer et al.*, 141 USPQ 205 and *In re Jerome J. Kanter*, 151 USPQ 331.

In agreeing with the examiner, the board merely adopted the reasons of the examiner as its own and further stated that there was no reason to believe that the lubricating finish of Barrett could not be applied to the segmented elastomeric polymer filaments of Yuk with the resultant reduction in tackiness of the treated filaments.

#### OPINION

##### Process Claims

Although the claimed method involves manipulative steps and a lubricating finish that are known, [\*6] the examiner's failure to cite a reference showing filaments composed at least partly of a segmented elastomeric polymer leaves us with a rejection which ignores a specific limitation of the claims. This court has stated that all limitations must be considered and that it is error to ignore specific limitations distinguishing over the references. *In re Saether*, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); *In re Glass*, 472 F.2d 1388, 176 USPQ 489 (CCPA 1973). However, we do not regard this as reversible error here, since Barrett does disclose filaments made from polyurethanes, hydrocarbon polymers, and polyesters, which can be used to make the admittedly wellknown filaments composed of a segmented elastomeric polymer.<sup>4</sup> Cf. *In re Schneider*, 481 F.2d 1350, 179 USPQ 46 (CCPA 1973); *In re Wadlinger*, 496 F.2d 1200, 181 USPQ 826 (CCPA 1974).

4Under the circumstances of this case, we do not regard use of appellants' admission that such filaments are "well known" to constitute a new ground of rejection. But see *In re Hunter*, 48 CCPA 822, 286 F.2d 619, 128 USPQ 544 (1961).

The examiner's failure to cite Yuk leaves us with only admitted prior art (segmented elastomeric polymers) and [\*7] Barrett, which does not refer to the tension problem caused by tackiness or purport to solve the problem.<sup>5</sup> However, the tension problem caused by friction with which Barrett is concerned is sufficiently analogous to suggest to one skilled in the art that the aqueous emulsion of Barrett would offer a solution to the tension problem caused by tackiness. Cf. *In re Pye*, 53 CCPA 877, 355 F.2d 641, 148 USPQ 426 (1966).

5Thus, appellants' product - a lubricated filament composed at least partly of a segmented elastomeric polymer with reduced tackiness - can be considered novel. *In re Neugebauer*, 51 CCPA 1138, 330 F.2d 353, 141 USPQ 205 (1964), cited by the examiner, which was deemed controlling in *In re Kanter*, 55 CCPA 1395, 399 F.2d 249, 158 USPQ 331 (1968), merely held that unobviousness of the final product was not determina-

tive of unobviousness of the method. Nevertheless, it is clear that this is a significant factor to be considered in viewing "the subject matter as a whole." *In re Naylor*, 54 CCPA 902, 369 F.2d 765, 152 USPQ 106 (1966). See also *In re Kuehl*, 475 F.2d 658, 177 USPQ 250 (CCPA 1973).

Accordingly, we hold the process claims to be obvious over Barrett and [\*8] admitted prior art.

#### Product Claims

The main motivation for combining Barrett and Yuk is the similarity of the polymeric filaments treated with the lubricating finishes. Yuk discloses that the high-melting, crystalline segments may be made from a polyurethane, while the low-melting, amorphous segments may be derived from a polyester or a hydrocarbon polymer. In Barrett, a wide variety of polymers may be treated with the lubricating finish, including polyurethanes, hydrocarbon polymers, and polyesters.

Appellants argue <sup>6</sup> that Yuk teaches one skilled in the art away from using the Barrett lubricating finish on segmented elastomeric polymers because of Yuk's use of the word "only" in the statement quoted above ("PRIOR ART") that textile oils result in a satisfactory finish for segmented elastomeric polymers "only" when employed with certain metal soaps. This argument is apparently based upon an exclusionary interpretation of the word "only" in that appellants would have one skilled in the art interpret "only" as excluding the use of other ingredients in the lubricating finish and other lubricating finish compositions for segmented elastomeric polymers. However, [\*9] we believe that one skilled in the art would have interpreted the word "only" in light of the background of the above-quoted statement wherein Yuk declares that "it has been generally accepted that oils cannot be used to lubricate rubber filaments because of the harmful effect of such oils on physical properties." This compels an interpretation that the textile oils may be used satisfactorily provided certain metal soaps are included in the lubricating finish. Yuk does not teach that more additives could not be used in the lubricating finish, or that other

suitable lubricating finish compositions could not be employed for segmented elastomeric polymers. <sup>7</sup>

6Counsel for appellants emphasized at oral argument that the lubricating finish of Yuk is substantially anhydrous and that the soaps in Yuk are not used as emulsifiers in the lubricating finish. Appellants' specification states that "[any] of the known emulsifying agents, which are capable of dispersing the wax and textile oil in an aqueous medium to form an emulsion which is stable over extended periods of time and at elevated temperatures, may be employed in the practice of this invention." No argument was made that the soaps of Yuk are unsuitable as emulsifiers in the lubricating finish of Barrett or the present invention.

7Although appellants argue that the teachings of Yuk would be interpreted by one skilled in the art to negative the use of the Barrett lubricating finish on segmented elastomeric polymers, it should be noted that Yuk actually issued before Barrett.

[\*10] In further seeking to overcome this rejection, appellants point to the alleged unexpected results in the suppression of tackiness. However, it appears that suppression of tackiness was an expected rather than an unexpected result inasmuch as Yuk was aware of the tackiness problem and noted in his examples that application of his lubricating finish resulted in an oiled elastic filament showing "substantially no tendency to stick."

In view of the foregoing, we hold that it would have been obvious to one of ordinary skill in the art to substitute Yuk's filaments of segmented elastomeric polymers for the filaments in Barrett or to substitute the lubricating finish of Barrett for that of Yuk. We agree with the board that the record provides no basis for believing that the lubricating finish of Barrett cannot be applied to the segmented elastomeric polymers of Yuk.

The decision of the board is affirmed.

AFFIRMED